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Anorectal avulsion: Management of a rare rectal trauma

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ABSTRACT

INTRODUCTION: Traumatic injuries of the rectum are unusual even though their treatment is challenging and often lead to high morbidity and mortality rate.
PRESENTATION OF CASE: This paper reports a rare case of complete rectal avulsion with multiple fracture and hemoperitoneum treated with a multistep approach in our department.
DISCUSSION: The anorectal avulsion is a rare rectal trauma; only few reports are available. Treatment key points of rectal trauma are: direct repair, diverting stoma and sacral drainage.
CONCLUSION: We reported a case of anorectal avulsion with complete detachment of external sphincter muscle. A multidisciplinary approach was mandatory in this kind of lesions.

1. Case report

A 25 years old male was admitted at a primary care hospital after a motorcycle crash; the accident mechanism remains unclear, probably he was impaled on a blunt hard surface.

Arriving at the hospital the patient was agitated but hemodynamically stable. He underwent chest and pelvic X-ray and total body CT-scan showing: a grade III[1] splenic injury, hemoperitoneum, vertebral fractures (T11 and T12), multiple rib fractures (from 10 to 12) without pneumothorax and pelvic trauma with fracture of left inferior rami of pubis and longitudinal fracture of sacro-coccyx (Fig. 1A).

A 18 Fr Foley catheter was easily passed through the urethra into the bladder revealing no urinary injury. The inspection of the perineum showed a big loss of substance with avulsion of anorectal complex (Fig. 1B), due to the contraction of the elevator ani muscle; the coccyx was clear into the perineal wound.

A laparotomy was performed in modified Trendelemburg position showing hemoperitoneum due to splenic lesion but no injuries of intraperitoneal rectum or other organs were found. Splenectomy was performed along with sigmoid loop colostomy and presacral drainage was set in place through the perineum; no direct suture of the rectum was possible because the anorectal stump was unrecognizable among the injured tissues.

After 24 h the patient was referred to our coloproctological unit. The patient was taken to the operating room, where irrigation through the efferent loop of sigmoidostomy with saline solution and Iodopovidone revealed the rectal lumen. It was retracted upward, ventrally and on the left, surrounded by the deeper component of anal sphincter and puborectal muscle; the distance between the anal canal and the perineal skin was about 10 cm preventing a secondary suture. A 24 Ch Foley catheter was passed through it and inflated (Fig. 1C) then slightly pulled to prevent the rectum from rising further. Necrosectomy was performed along with osteosynthesis of sacrum. The presacral drainage was removed and the wound dressed with wet-to-dry dressings. Conservative treatment was undertaken for spine and rib fracture.

Postoperatively the patient had no major complications; antibiotic therapy was undertaken postoperatively with Cefazolin for 7 days. The patient had several debridement and dressing changes in the Operating Room; in the first two weeks the patient had dressing changes daily, then hydrocolloid dressings were set in place and changed every 4–5 days.

The ischio-rectal wound healed in secondary intention without signs of infection in 9 weeks; after 10 weeks a sliding skin flap from the left gluteus was performed to cover the skin defect; the postoperative course was uneventful and the patient was discharged at the 12th week.

Manometry, performed at the 14th week showed a resting pressure of 29 mmHg and a maximum squeezing pressure of 75 mmHg, rectoanal inhibiting reflex (RAIR) was present and the anal canal was reduced to 2.6 cm of length. Pelvic floor rehabilitation with electrostimulation and biofeedback was undertaken for 4 months achieving an improvement in resting pressure and anal canal length up to 42 mmHg and 3.4 cm respectively.

Colostomy was closed without significant complications. Seen at latest follow-up (34 months) the Wexner score for incontinence was 0 and the patient quality of life was good with complete return to normal life. Clinical and radiological (defecography) examination showed an anal canal with normal tone but dislocated cranially.

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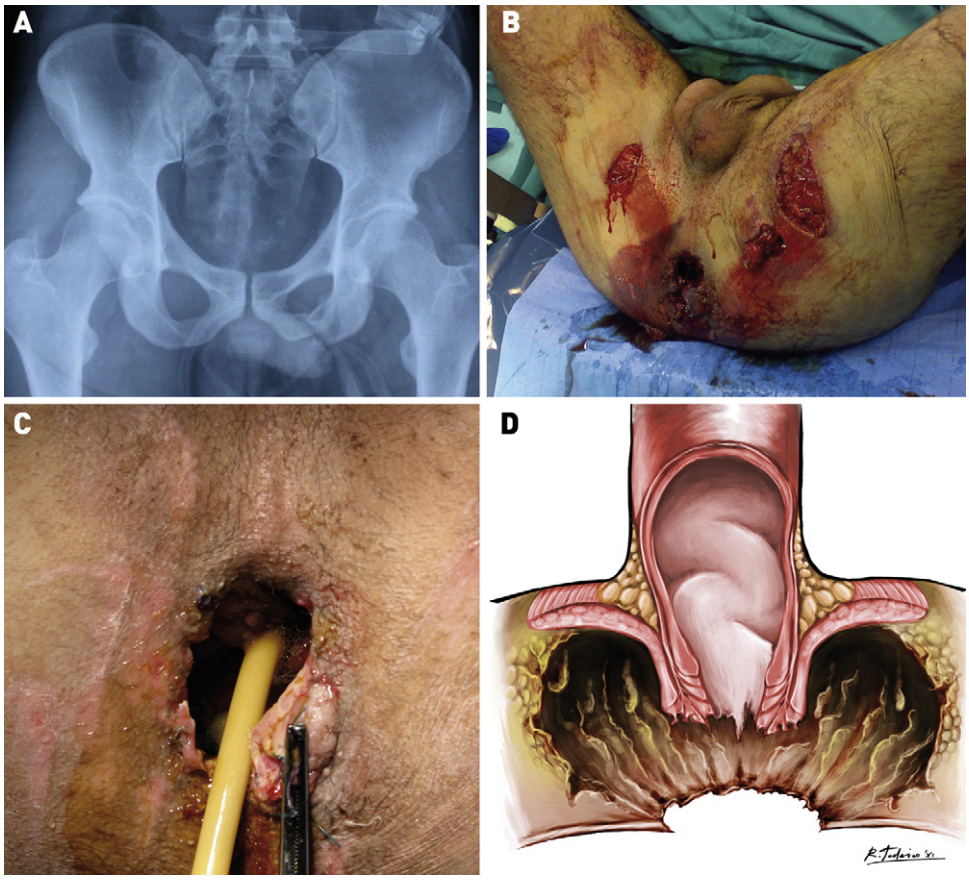

Fig. 1. (A) Plain pelvis radiograph; (B) Inspection of the perineum in OR few hours after trauma; (C) Perineum with a catheter into the rectum (coccyx is clear in the wound – lower part); (D) Lesion's illustration.

2. Conclusions

The anorectal avulsion is a rare rectal trauma; only few reports are available[2,3] and treatment is not standardized.[4] A multidisciplinary approach is mandatory in this kind of lesions[5,6] involving orthopedic and general surgeons, anesthetists and rehabilitators. The main difficulties encountered in treating traumatic lesions of pelvis concerns: the control of bleeding and the prevention of sepsis. The absence of pelvic major fractures allowed a good hemorrhage control with laparotomic splenectomy alone. Early repair of the rectum, diverting colostomy, distal rectal wash-out and wound debridement are the most important procedure for the prevention of sepsis. In our case direct suture was impossible due to big loss of substance (Fig. 1D) and high risk of infection; nevertheless primary repair of rectal lesion should always be tried if local conditions allow it.

Presacral drainage has been used widely to reduce abscess formation in extraperitoneal rectal trauma. This evidence derives mainly by war injury,[4] but some authors[6,7,10] demonstrated no difference in infection rates associated with civilian rectal trauma caused by low velocity injury.

Diverting colostomy has been demonstrated safe and effective in reducing infection rate associated with rectal trauma[8] and a valid tool to perform rectal wash-out; in this case it was also useful in locating rectal stump through irrigation.[9]

In anal avulsions, the anus and sphincter lose their joining with perineum and are pulled upward and ventrally following levator ani muscles. Good knowledge of pelvic floor dynamic should always guide surgeons in treating such complex lesions.

The colostomy closure was performed only after pelvic rehabilitation to prevent transitory incontinence.

Conflict of interest

None.

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None.

Ethical approval

Written consent was obtained.

Author contributions

Corrado Rispoli, Loredana Iannone and Jacopo Andreuccetti wrote the article. Gennaro Rispoli and mariano Armellino were involved in data collection and clinical discussion.

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